BASIC COMPONENTS IN SAM

- CLIENT: A PROCESS THAT HAS DATA PACKETS TO SEND.

- SEQUENCER: SERIALIZE DATA PACKETS SENT TO THE GROUP.

- COMMIT SERVER: STORE THE ORDERING INFORMATION FOR EACH DATA PACKET.

- DATA SERVER: STORE DATA PACKETS.

- CHECKPOINT SERVER:
  -DO MESSAGE CONSOLIDATION.

NOTE: LOGICAL CONCEPT ONLY.

ASSUMPTIONS: UNIQUE PROCESS ID
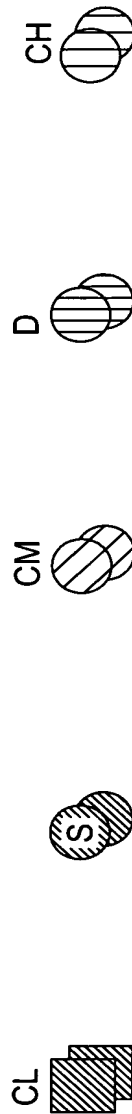   UNIQUE DATA PACKET ID (E.G. PROCESS ID + SEQ)

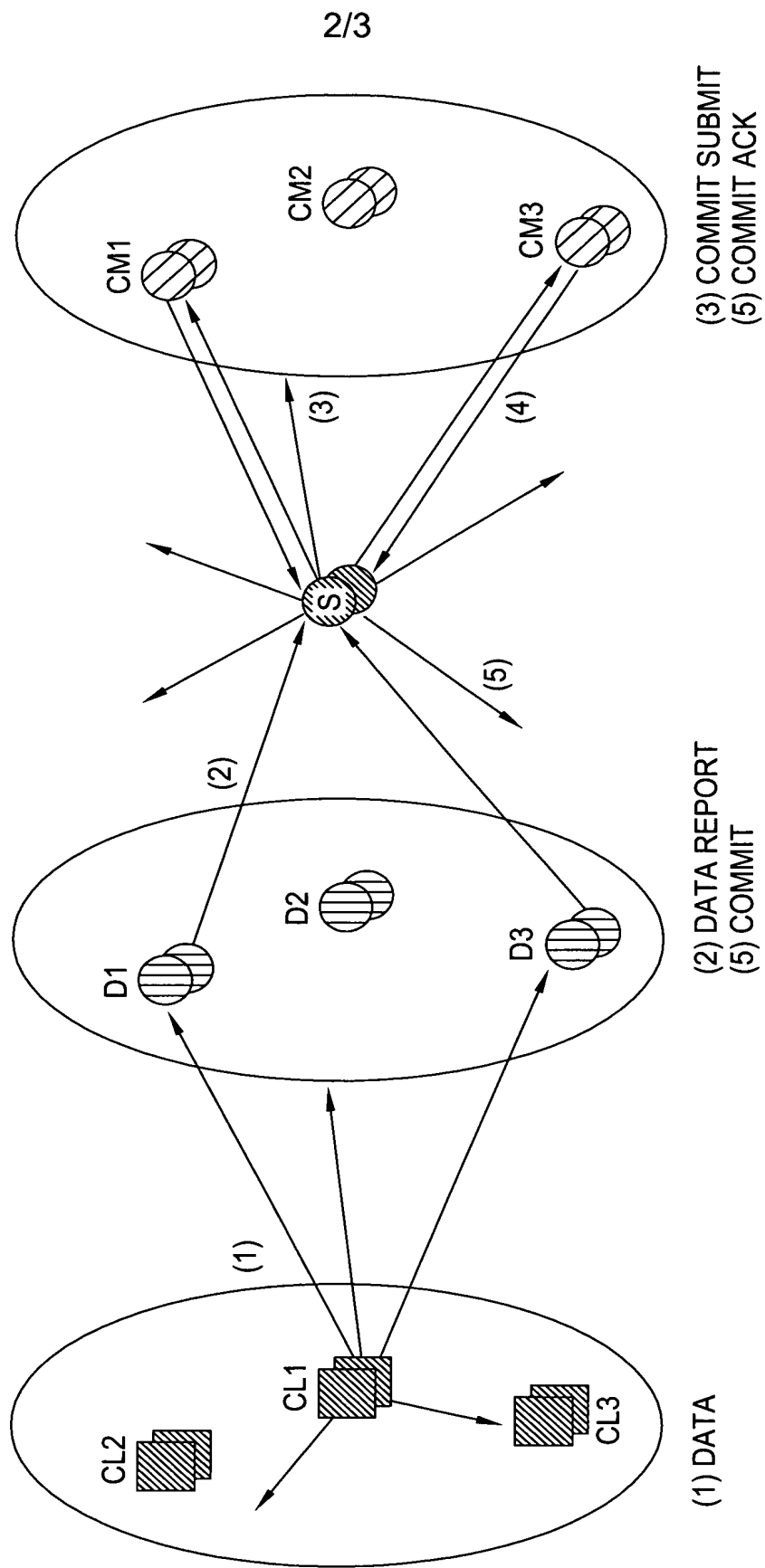CL   S   CM   D   CH

FIG. 1A

SENDING A DATA PACKET IN SAM

CM1

CM2

CM3

(3)

(4)

S

(2)

(5)

D1

D2

D3

(1)

CL1

CL2

CL3

(3) COMMIT SUBMIT
(5) COMMIT ACK

(2) DATA REPORT
(5) COMMIT

(1) DATA

FIG. 1B

ASYNCHRONOUS COMMUNICATION
AND TOTAL ORDERING?

CM1   CM2   CM3

S

D   D   D

CL

COMMIT

COMMIT REQUEST

COMMIT

GOSSIP

DATA REQUEST

DATA

- DELIVER PKTS IN ORDER OF
  COMMIT NUMBER
  (CONTINUOUS!)

- IF A PKT IS MISSING, GET
  ITS PKT ID FROM COMMIT
  SERVERS, THEN GET THE
  PKT FROM DATA SERVERS.

- GUARANTEED ATOMICITY
  AND TOTAL ORDERING! NO
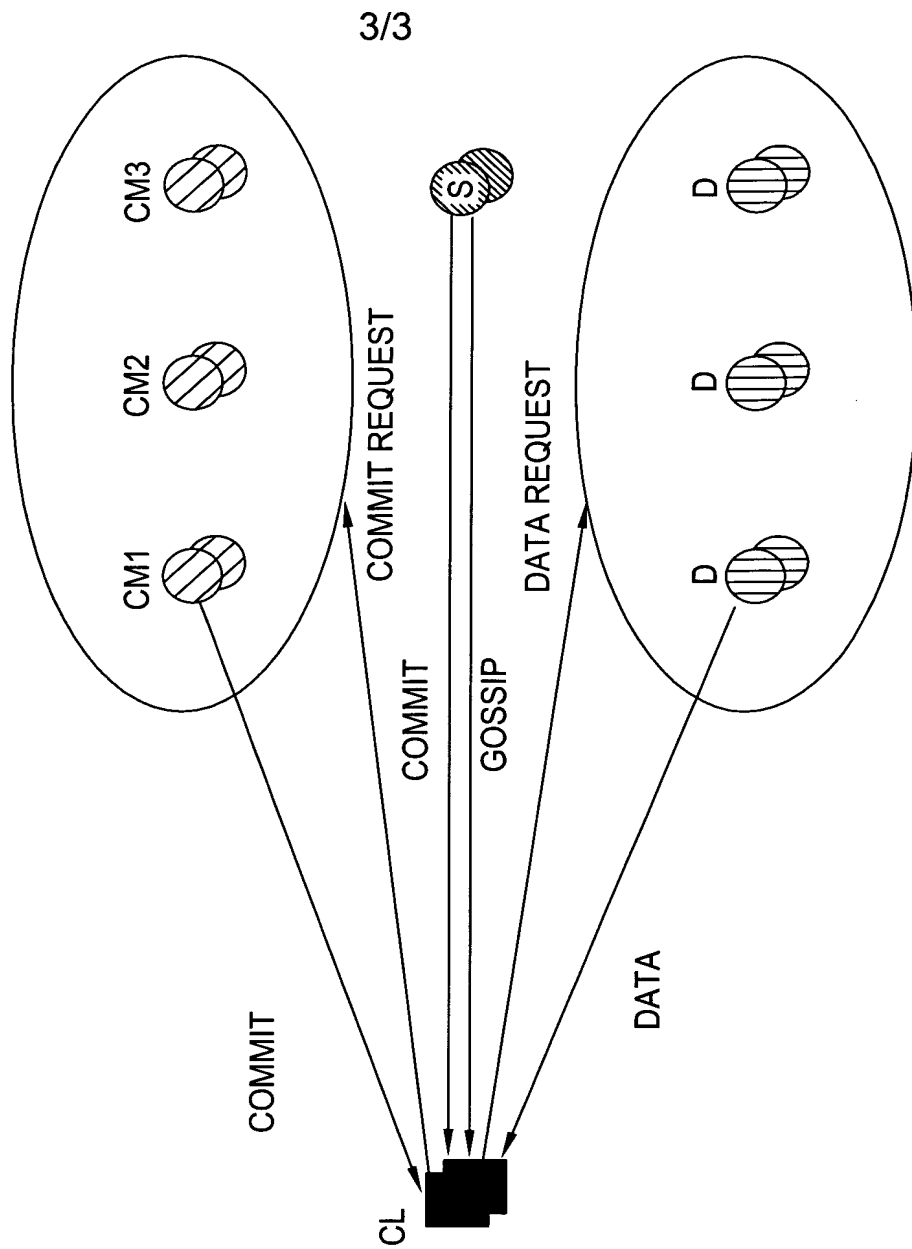 NEED TO GET RESPONSE
  FROM OTHER CLIENTS.

FIG. 2